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EXAMINER

LEVITAN, DMITRY

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/692,297
Filing Date: October 23, 2003
Appellant(s): CIOFFI ET AL.

Robert J. Crawford
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/12/08 appealing from the Office action mailed 10/11/07.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

Appellant Amendment after Final, dated 12/10/07, was not entered due to new matter and new issues of the Amendment, as explained in Advisory Action, dated 12/19/07.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,005,855

ZEHAVI

12-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Drawings

1. The drawings in this application appear to be informal. If this is the case, when application is allowed, applicant will be required to submit new formal drawings.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following information mentioned in the description: equal rate allocation on Fig. 2, as disclosed on page 11, therefore the disclosed advantage of the proposed algorithm is not supported by Fig. 2.

Specification

1. The disclosure is objected to because of the following informalities: text on pages 10 and 11 is unclear:

- c. Step 2 operation is unclear, as the relations between the rate increase and the resulting vector of transmit powers are not disclosed.
- d. Step 3 details, directed to set of users, are unclear.
- e. Text directed to the algorithm on page 10 and 11 is unclear, as the steps of the algorithm are not clearly disclosed.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 1-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not provide sufficient details to enable a skilled in the art to make and use the invention because it does not adequately describe the following:

Regarding claims 1, 10, 20, 21 and 25, how to change the transmission rate based on a function of resulting vector of transmit powers, a degree and a power based criteria.

Regarding claims 1, 10, 20, 21 and 25, how to generate a resulting vector of transmit powers based on the increase of transmission rate.

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The specification does not provide enough details about the structure and operation of the elements associated with the above identified claimed features to enable one skilled in the art to make and use the invention without undue experimentation.

4. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention.

Claims 1, 10, 20, 21 and 25 limitations directed “resulting vector of transmit powers ensuing the increased transmission rate” are unclear, because it is not understood what is “resulting vector of transmit powers”.

Claims 1 and 20 limitations, directed to “a degree of transmission-rate-allocation unfairness relative to the transmission rates of all users”, are unclear, as written, as it is not understood if claimed degree is one value of unfairness for each user or a set of unfairness values for all users.

Claim 4 recites the limitation “the set of all users and the corresponding iteration” in line 2 and 3. There is insufficient antecedent basis for these limitations in the claim.

Claims 10 and 21 limitations, directed to “for each user, increasing its transmission rate without changing the transmission rate of the other users” is unclear, because increasing transmission rate for each user will change the transmission rates for all the users.

These are only examples of the claims problems. All claims should be reviewed to resolve the claim’s clarity problems.

Claim Rejections - 35 USC § 103

5. Claims 1, 3, 4, 6, 7, 10, 15-18, 20, 21, and 23-25 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi (US 6,005,855).

6. Regarding claims 1, 6, 10, 15, 20, 21 and 23-25, Zehavi substantially teaches the limitations of the claims.

A method, a system and data terminal for allocating user transmission rates in a communication system that is adapted to permit users to transmit data simultaneously via shared frequency and special resources (a communication system, including CDMA, with multiple users sharing a communication resource 1:20-55), comprising:

while maintaining the transmission rates of the users to at least a minimum user transmission rate to provide expected minimum quality of communications for each of the users, incrementally adjusting the transmission rates of the users by iteratively changing the transmission rate of each user (maintaining a minimum transmission rate, as an allocated traffic channel 2:65-3:25, with a capacity to support speech transmission with predefined quality 7:35-60) as a function of

transmit powers ensuing from increased transmission rate (power control groups, shown on Fig. 4 and 8:42-67),

a degree of transmission rate allocation unfairness relative to the transmission rates of all users (utilizing fairness in the overflow rate assignment, which is inherently is directed to unfairness, because these both factors are interrelated, 21:14-22:30), and
a power based selection criteria (providing maximum separation for duplicate power groups, as shown on Fig. 4 and 8:62-9:2).

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Zehavi does not teach combining transmit powers into a vector.

Official notice is taken that combining a set of values in a vector is well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add combining transmit powers into a vector to the system of Zehavi to improve the system analysis by utilizing a well known vector presentation of the transmit powers for mathematical operations to optimize the system.

In addition, regarding claim 10, Zehavi teaches determining the channel rate increase based on the system available/total capacity, as overflow channels are assigned to the travel channels only if the system capacity is available 9:60-66.

In addition, regarding claims 21 and 25, Zehavi teaches means to implement his method, as shown on Fig. 2, wherein the digital transmission terminal/base station, shown on Fig 2 and 6:51-65, is inherently clock based, because clock is essential for the operation of the system.

7. Regarding claims 3, 4 and 16-18, Zehavi teaches assigning the variable rate to all users, therefore performing his method until all the users are served and all possible system capacity pool is distributed 3:17-25.

8. Regarding claim 7, Zehavi teaches assigning the traffic channel to the user before assigning an overflow channel to increase the user's rate 2:65-3:10.

9. Regarding claim 8, Zehavi teaches assigning the additional rate to the user by adding one or more overflow channels 20:35-45.

10. Claims 5, 12, 14 and 22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi (US 6,005,855) in further view of Admitted Prior Art (Current Application, Background). Zehavi substantially teaches the limitations of the claims (see parent claims rejections above).

Zehavi does not teach using OFDM method.

Admitted Prior Art teaches OFDM systems as typical communication systems for multiple users, 2:5-11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using OFDM method to the system of Zehavi to improve the system compatibility with popular IEEE 802.11a standard.

11. Regarding claim 13, Zehavi teaches assigning the variable rate to all users, therefore performing his method until all the users are served and all possible system capacity pool is distributed 3:17-25.

(10) Response to Argument

On pages 8, 9, 24 and 25 of the Brief, Appellant argues that Examiner did not articulate why Fig. 2 should be clarified.

Examiner respectfully disagrees.

The Final rejection cited portion of the disclosure (page 11, lines 25 and 26): “as shown on Fig. 2, the resulting rate allocation is significantly better than equal rate allocation” which is not supported by Fig. 2, because Fig. 2 does not show rate allocation.

Fig. 2 comprises a single curve, representing System throughput, and no information related to rate allocation comparison with equal rate allocation, as clearly indicated in the non-final Office Action.

The problem with Fig. 2 is one of many clarity problems of the current application, the problems, which have been indicated to the Appellant in the previous Office actions.

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In addition, the Appendix provides no information on generating a resulting vector of transmit power based on the increase transmission rate. The only vector, mentioned in the cited portion of Appendix A is a standard interference vector, which is not a resulting vector of transmit powers.

On pages 8 of the Brief, Appellant argues that Examiner refused entry of the amendment [After Final] without providing any rational.

Examiner respectfully disagrees.

Advisory Action, dated 12/19/07, clearly identified the reasons why the amendment will not be entered: new matter and new issues limitations proposed for claims 21-23, particularly new matter limitations, directed to “data processing module” and “data processing arrangement” in claim 21 and “a data port” in claim 23.

On pages 9 and 10 of the Brief, Appellant argues that the limitations in question include the following: 1) a vector of transmit powers, 2) a degree of transmission-rate-allocation unfairness and 3) a power-based selection criteria.

Examiner respectfully disagrees.

Claim 1 limitations are directed to adjusting rates of the users by iteratively changing the transmission rate of each user as a function of a vector of transmit power, a degree of transmission-rate-allocation unfairness and a power-based selection criteria.

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Therefore the limitations in question are the adjusting the transmission rates function, which is based on the cited three elements/variables. Describing the function elements/variables is not sufficient to disclose the function of adjusting rates.

The provided citations of the disclosure fail to adequately disclose the claimed function.

On pages 10, 11, 14 and 15 of the Brief, Appellant argues that the method steps, directed to the algorithm and a set of users, are clearly disclosed on pages 10 and 11 (steps 1-4).

Examiner respectfully disagrees.

The cited portion of the disclosure was indicated as unclear text in the previous Office Action.

Therefore, Appellant's repeated reference to this confusing portion of the disclosure, as indicated in the objections to the specifications, without any explanations is not understood.

On page 17 of the Brief, Appellant argues that the disclosure provides clear explanation of resulting vector of transmit power.

Examiner respectfully disagrees.

Appellant identified the meaning of the individual words in the "resulting vector of transmit power" but failed to identify the meaning of this limitations, as what operation results in producing this vector is still unclear. Examiner understands that "resulting means to come about as a consequence" but does not understand what are the consequences preceding the vector.

On pages 18 and 19 of the Brief, Appellant argues that claim 4 limitations, directed to the set of all users and the corresponding iteration do not require basis

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Examiner respectfully disagrees.

Claim 4 limitations, directed to “the set of all users” have no antecedent basis, as “the set of all users” is different from claim 1 limitations “all users”, because a set of all users can be directed to a portion of all users.

Claim 4 limitations “the corresponding iteration” fails to identify the particular iteration of the claim without proper antecedent basis.

On pages 20 and 21 of the Brief, Appellant argues that the Zehavi is unrelated to the claimed invention.

Examiner respectfully disagrees.

Current application and Zehavi are directed to sharing the transmission resources among multiple users in a CDMA system, as disclosed on Zehavi 1:20-30 and the current Application’s Abstract.

On page 21 of the Brief, Appellant argues that the Zehavi does not teach changing the transmission rates of the users relative to each other.

Examiner respectfully disagrees.

Zehavi clearly teaches assigning overflow channels to the users to accommodate their rate requirements. See Zehavi 2:65-3:25. These additional channels change the transmission rates of the users relative to each other.

On page 22 of the Brief, Appellant argues that the Zehavi does not teach “fairness” of the allocation of available channels to active channels.

Examiner respectfully disagrees.

Zehavi clearly teaches fairness in the assignment of overflow channels as shown on Tables 1-III and corresponding text on 22:25-24-25 to avoid assignment of three of six overflow channels to one active traffic channel 22:51-55.

In addition, regarding inherency of “un-fairness”, Zehavi teaching of fairness of rate distribution among the system users, as disclosed on 22:25-30, inherently teaches reducing unfairness of the rates assignment to the users.

On pages 23 and 24 of the Brief, Appellant argues use of a vector is an impermissible hindsight reconstruction.

Examiner respectfully disagrees.

The Supreme Court opinion in KSR case (04-1350, U.S. Apr. 30, 2007), rejected the rigid application of the test, requiring “teaching, suggesting or motivation” in the prior art which would lead one of the ordinary skills in the art to combine the prior art teachings.

In current case, combining prior art elements of Zehavi with known methods of organizing values in vector of IEEE Dictionary of IEEE standard terms, page 1249, yield predictable result, as explained in the rejection above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Dmitry Levitan/

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